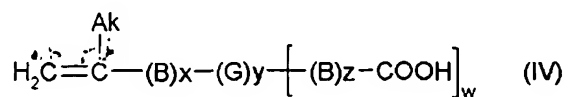


<p>2000-223830/19 A97 D15 (A14 D25) BENC 1998.07.29 BENCKISER TEMIZLIK MALZEMESI SANAYI *WO 200006505-A1 1999.07.29 1998-1034178(+1998DE-1034178) (2000.02.10) C02F 5/00; 1/42, 5/08, 5/12, C11D 17/00, C02F 5/10, 1/50 Composition used in water reservoir in kitchen or sanitary area, e.g. for descaling coffee machine or cleaning toilet, contains basic composition functional in first charge and core-shell particles for triggered release in fresh water (Ger) C2000-068197 N(AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG US UZ VN YU ZA ZW) R(AT BE CH CY DE DK EA ES FI FR GB GH GM GR IE IT KE LS LU MC MW NL OA PT SD SE SL SZ UG ZW)</p> <p>Addnl. Data: WAESCHENBACH G, WIEDEMANN R, CARBONELL E, ENDLEIN E, GIBIS K L BENCKISER NV (BENC) 1999.07.29 1999WO-TR00036</p>	<p>A(12-W5, 12-W11J, 12-W12B) D(4-A, 4-A3, 11-D1D)</p> <p>Composition for use in a water reservoir in kitchen or sanitary areas comprises: (i) A basic composition, which becomes functional when added to a first charge of water in the reservoir; and (ii) particle(s) with core(s) containing substance(s), which become functional after this water is (partly) discharged and fresh water enters.</p> <p>DETAILED DESCRIPTION Composition for use in a water reservoir in kitchen or sanitary areas comprises: (i) A basic composition, which becomes functional when added to a first charge of water in the reservoir; and (ii) particle(s) with core(s) containing substance(s), which become functional after this water is (partly) discharged and fresh water enters, enclosed in a shell, which increases in solubility with decreasing concentration of a specific compound (I) in the surrounding medium, to prevent the shell dissolving or separating until fresh water enters.</p> <p>USE The product is used in a water reservoir in kitchen or sanitary areas (all claimed). It is useful e.g. for descaling coffee machine or as</p>
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<p>additive to a cistern for cleaning and removing lime scale from toilets.</p> <p>ADVANTAGE The composition allows simultaneous dosing of substances that are not completely compatible for simultaneous use and become functional at different times.</p> <p>DESCRIPTION OF DRAWING The drawing shows a cross-section through a tablet. Tablet 1 Two halves of the same or different composition 2, 3 Hemispherical cavity 5 Particle 6</p> <p>EXAMPLE Cores for particles containing pH indicator consisted of 1 g mixture of 99.7% sodium chloride and 0.3% indicator (e.g. methyl orange or bromocresol green). The cores were provided with a shell of one of the specified polymers. Tablets for use in a coffee machine were made by pressing 2 half tablets (e.g. 20 g) with cavities from a mixture of 56 wt.% amidosulfonic acid, 24 wt.% maleic acid and 20 wt.% sodium bicarbonate. A core was placed in the cavity in one half,</p>	<p>then this was coated with adhesive and the other half was pressed in place.</p> <p>TECHNOLOGY FOCUS Organic Chemistry - Preferred Composition: The core contains perfume, disinfectant and/or pH indicator. At least part of the core may consist of an encapsulated liquid or a solid. Preferred Conditions: The (I) concentration in the region of the particle(s) is high enough to prevent the shell dissolving or separating before fresh water enters. Preferred Product: The particle(s) is coated with a substance that dissolves or separates in the time from addition to the water in the reservoir until the water is (partly) discharged, largely irrespective of the (I) concentration in the surrounding medium. The basic composition is in the form of a tablet and the particle is arranged in or on this so that the (I) concentration in the vicinity of the particle is high enough to prevent the shell dissolving or separating. In particular, the tablet has at least one cavity containing the particle(s) of about the same volume or a smaller volume. The particles are arranged loosely or fixed, preferably with an adhesive and especially in the middle of the cavity. In particular, the tablet has a single spherical cavity</p>
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<p>2000-223830/19</p> <p>containing one spherical particle of smaller diameter. Alternatively, the cavity is a (round) depression in one surface of the tablet containing particle(s), especially a single particle, not protruding above the surface of the tablet. The cavity or depression is parallel to a round opening at the surface, through which the particle(s) cannot escape. Polymers - Preferred Composition: The shell contains at least one compound (II) that is insoluble or hardly soluble before fresh water enters and soluble enough to dissolve or separate from the core after enough fresh water has entered. The solubility of compound (II): (a) Increases with decreasing hydroxyl ion concentration and hence decreasing pH of the surrounding medium; or (b) increases with decreasing hydrogen ion concentration and hence increasing pH of the medium. Compound (II) preferably is a polymer, preferably a pH- sensitive polymer with at least one repeating unit with: (a) Basic function(s) that is not part of the main polymer chain; or (b) an acid function. These units are derived from vinyl alcohol derivatives, acrylates or alkylacrylates with a basic or acid function or a carbohydrate with the basic or acid function. (II) with a basic function may also be a pH-sensitive polymer derived from chitosan or kappa-</p>	<p>carrageenan.</p> <p>The basic function is: (a) An amine, preferably a secondary or tertiary amine, more preferably derived from an unsaturated amine of formula (III);</p> $\begin{array}{c} R_1 \quad R_2 \\ \quad \\ C = C - G - \left(\begin{array}{c} R_3 \\ \\ C \end{array} \right)_x - \begin{array}{c} R_4 \\ \\ N \\ \\ R_4 \end{array} \end{array} \quad (III)$ <p>G = a group of the formula -OCO-, -CONH-, -NHCO-, -NHCONH-, - NHCCO-, -OCONH-, -OCCO- or preferably -COO-; R₁, R₃ = 1-3 carbon (C) alkyl or preferably hydrogen (H); R₂ = H or 1-3 C alkyl; R₄ = H or 1-5 C alkyl; x = 1-6; (b) an imine; or (c) a basic aromatic group containing nitrogen (N), preferably a pyridine or imidazole group. The acid function is derived from a compound of formula (IV);</p>
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G = a group of the formula -COO-, -OCO-, -CONH-, -NHCO-, -NHCONH-, -NHCOO-, -OCONH- or -OCOO--;

B = a linear or branched, saturated or unsaturated, optionally substituted alkylene, arylene or aralkylene group;

Ak = H or alkyl, preferably with 1-4 C;

x, y, z = 0 or 1;

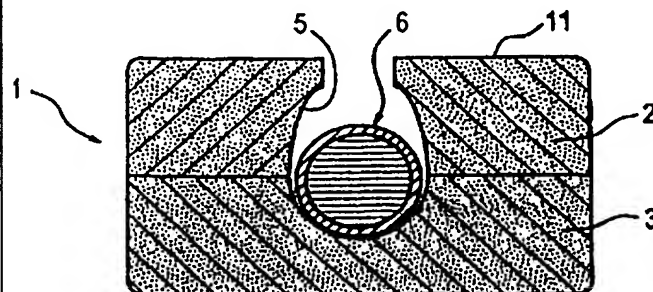
w = 1, 2 or 3;

preferably (V;

G = -OCO-;

x = 0.)

Especially suitable carbohydrates with an acid function are derived from a polysaccharide by partial esterification of some of the free hydroxyl groups with a polycarboxylic acid and/or partial etherification with a product obtained by esterifying one mole polycarboxylic acid with one mole polyol.



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